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MY SCHOOL-BOY DAYS IN NEW YORK CITY FORTY YEARS AGO.

BEFORE Horace Mann appeared to bless the people of Massachusetts, by giving to that Commonwealth a highly reformed and splendid system of education; before Herbert Spencer, in his profound treatise on human culture, had laid down the Law of Nature by which the race should be educated; before our own Youmans, and others of the present age, had uttered their philosophic thoughts on the same subject; nay, before there was any "Society for the Prevention of Cruelty to Animals," it was my misfortune to be a school-boy in the city of New York. I mention this last benevolent institution, since if there then had been such a thing, there also might have been some society, or some law, for the prevention of cruelty to school-boys.

Charles Dickens, in "Nicholas Nickleby," has given us his world-renowned description of Dotheboys Hall; but his account was fiction; mine is history: he had to invent; I have only to remember.

Few things in life are more painfully sad to one who has had some ambition "to know the secrets of this wondrous world," than the remembrance that his early training was such as to deprive him of that development to which, by no effort in after-life, he can ever attain. How the sad and solemn lines of Longfellow find an echo in our breasts, while sorrowing over the forever lost days of youth!

"Ah, me! what wonder-working occult science
Can from the ashes in our hearts once more
The rose of youth restore?
What craft of Alchemy can bid defiance
To time and change, and for a single hour
Renew this phantom flower?

[Entered according to Act of Congress, in the year 1868, by J. W. Schermerhorn & Co., in the Clerk's Office of the District Court of the United States for the Southern District of New York.]
N. B. The press are at liberty to copy, provided credit is given to *The American Educational Monthly*.

> **And the sea answered with a lamentation,**
> **Like some old prophet wailing; and it said—**
> **Alas! thy youth is dead!**
> **It breathes no more; in the dark places with the dead of old**
> **It lies forever cold!"**

To recall with much minuteness the events of forty years ago, may seem a doubtful undertaking; but let it be borne in mind, they were impressive events, stamped on the mind of early childhood; and it is scarcely necessary to add, that the Man remembers many of the far back incidents of his early years, much better than the comparatively recent ones of his adult age.

Now, first, as to my school-house. It was the basement of a large Gothic church, situated on what was then the northern outskirt of the city. Broad unenclosed acres stretching out of sight, where we were wont to fly our kites, play at marbles, ball, and tag, made up its background. But the pavior and the mason have been abroad; stony streets and bricks and mortar, cover the playgrounds, and the only landmark left to identify the spot, is the old towering massive edifice, hemmed in for miles round by the swarming habitations of men. The school-room, as it then appeared, was about one hundred and fifty feet long, by about seventy-five feet wide; but, as the size was measured by the magnifying eye of childhood, it was probably of smaller dimensions. Low and narrow windows, set in alcoves along one side and both ends of the hall, let in the light, interspersed, at the decline of day, with spectral shadows of the gravestones without. A row of long desks, with backless benches, upon each of which sat, with curved spines, some dozen pale-faced, cowed-down boys, extended through the middle of the room at right angles to its sides, leaving a wide rectangular space, or rather race-course—as will appear—round the school-room. Attached to one end of about two-thirds of the desks, were round vertical shafts, having mounted on the top square wooden blocks, painted white, on each side of which were painted, in black letters, words or sentences, according to the grade of the class. These were to be written down on sand and slates, when enunciated by a large boy called the "Dictator," as he paced down the hall with a measured tread and authoritative voice, dictating to each class the lesson of the moment. On a platform, at the upper end of the room, stood the Master's desk and high seat. Here enthroned, the Monarch of the school, with ferule, cat-o'-nine-tails, and other implements of torture, to uphold his government, reigned over his subjects in all the pride and power and ignorance and cruelty of the king of Dahomey, exercising his absolute authority over his black kingdom. No means of ventilation whatever was to be seen. The word "ventilation" was not known in the vocabulary of the school; but the heat, with all its noxious gases, generated by that

breathing multitude of boys, was carefully kept within the school, as a substitute for fuel. With doors and windows tightly closed, and about one hundred and fifty scholars exhaling carbonic acid gas, and radiating impurities from their unwashed persons, all day long, the atmosphere of the place must have been very like that of the Black Hole of Calcutta. Neither blackboards, maps, atlases, nor artificial globes, were ever used in the school. Descriptions of the Earth or of the stars, we never had; but instruction on the physical geography of Heaven and Hell, we had abundance. In place of such auxiliaries to education as maps and blackboards, there were others gracing the walls and deemed of much more importance, not only to the intellectual, but especially to the moral and religious development of the students. On the wall, behind the master, in full view of the whole school, to keep the scholars in perpetual remembrance, hung a cat-o'-nine-tails of enormous size. The handle had the dimensions of a farmer's flail. The lashes were of corresponding length and as thick as your finger;—it took both hands to wield it. This was taken down to be used on extra occasions only; but a single-handed one was in constant service in the daily training of the school. In close company with this huge "cat," hung two other implements of culture. These last were made of leather, covered over with some kind of hard, pitchy material, and were called respectively the "Fool's-cap" and the "Hangman's-cap." The former was a kind of skull-cap, without a visor, which made a person look, and I presume feel, like a fool indeed. The "Hangman's-cap" jutted all over with indescribable angles and snaky curves, like one of those horrors worn on the head of a Chinese god, or a victim of the *Auto-da-fe*. They were both instruments of great terror—equally as much so as the huge "cat" hanging beside them, dreadful as that was. In addition to these, erected on the platform to the right of the master, was another apparatus of the system, called "The Iron Bar." This was a rail of iron, about three feet long and about an inch square at its transverse section, placed in a horizontal position on upright supports, about eighteen inches high. It was used for feats of equilibrium performed with bare feet, that were cruel in the extreme. These engines of torture were used chiefly to reform the characters of those who were deemed the malefactors of the school. They were regarded as absolutely necessary to morals, order, and mental discipline—to be held *in terrorem* over some and applied without mercy to others. As I still remember them, they appear as bloody instruments of the Inquisition, and, without doubt, would be rare curiosities for the museum of the present day. But their practical application will be related further on.

The instruction came under no general method of teaching that was ever elsewhere my experience to know. It could not be called the "Lancasterian system," although it had an element of this. It was not the

"Kinder Garten," nor the "Pestalozzian system," nor even that of Teddy O'Rourk, the celebrated "Irish Tutor." It was *sui generis*. The "Faculty" consisted of the master, the dictator, and a monitor for each class, excepting the classes engaged in what were considered high abstract studies. The latter came under the immediate instruction of the master. He had the supreme appointing power of the dictator and the monitors; but the clergyman who officiated up stairs, and who was the Lord Temporal and Spiritual of the school, had the appointment of him. The dictator and monitors were selected from the larger boys, applying the principle of rotation in office. A week at a time was the length of their administration. Their positions were regarded as honorable and were very authoritative. The schoolmaster seldom or never came in contact with the scholars under the monitors, except with the ferule, the "cat," and other mediums of a similar nature, of which more anon.

It was the uniform custom of the master not to arrive in the morning till about half an hour after the regular time for commencing school. Some of the boys, who knew where he lived, were by turns assigned the duty of going every morning to his house for the key to open school betimes, in order that the preliminary exercises of the day might be got through with by the monitors, and things set in motion by the time the master came. One striking incident of those days causes me vividly to remember this usage of the school. I will here, by way of parenthesis, relate it, though it more appropriately comes under a different head of the system from that which is now about to be described.

One fine morning it so happened that nobody went for the key, and the scholars, of course, could not get in school. Overjoyed at their half-hour immunity from their penitentiary, they were improving it out of doors with uproarious jubilee. Of a sudden there was a lull—what's the matter? "The master's coming," announce some terrified breathless urchins. 'Tis true! 'tis he! He approaches with rapid strides, threatening looks, and menacing mutterings; he shakes violently his pugnacious Phrenological organs; he shakes one fist, then the other, then both; he shouts savagely at us to come into school; he shakes furiously the school-room door when opening it, as if it also were to blame. The epithets "Rascals!" "Villains!"—threats, denunciations, almost imprecations, fall from his lips as we enter. He starts immediately for his desk, seizes his ferule—"Silence, and stand up every one of you!" he shouts. As quick as well-drilled soldiers, we fall into line, with our backs against the wall, all round the hall. "I'll show no partiality," he exclaims; and commencing at the head of the line, he deals each and every one of us three hard stinging cracks upon each hand, because somebody didn't go for the key. This chastisement he, no doubt, considered impartial and "even-handed justice." The fact of the matter was, however, that not one in twenty of the

punished boys knew where the cruel tyrant lived, and the delinquent boy, whose special duty was to go for the key that morning, was probably not at school that day.

The preliminary exercises of the morning consisted of spelling and reading. No uniform sort of books was used in the school, save the Catechism. As every word of this was absolute and infallible truth, there, of course, could be no improvement to it, and therefore there were no varieties. We were more liberal and latitudinarian in our secular books. One scholar had one kind of spelling-book, another a different one. One read from the "English Reader," another from "Cook's Voyages," and a third from the "Life of Washington,"—all in the same class. Arithmetic was taught from "Dilworth's Assistant," "Daboll," and from an antediluvian relic, called "The Gough." This last book was considered as exhaustive in the science of numbers, and was said to be the production of a person of the same name, a great Irish scholar, who lived in ancient Irish times. The spelling-lesson of a class would be heard one morning from one kind of book and on the next from a different kind, just as it happened; and that boy was accounted lucky whose book chanced to be selected for any single occasion, as he, therefore, was more likely to be posted in the lesson than the rest of his class.

Let us take the system in its daily order. It is nine o'clock. A boy has just returned from the master's house with the key. He opens the door, rings the bell, and the scholars without, leave off their sports and pour into school. They array themselves against the wall around the room as military companies, each class under its own monitor as captain. Doubt, fear, and trembling agitate many, as if they really were soldiers going into battle for the first time. The report of their scholarship on the present occasion will be made to the master upon his arrival, and they have often experienced the penalty of being delinquent in their "task." Spelling now commences along the whole line;—each captain, as it were, drilling his own company according to a system of tactics peculiarly his own; but an apparent unity of action and purpose, and certain *esprit de corps*, pervade the whole body. It is indeed an exhibition of interest to the uninitiated. Some hundred simultaneous voices, pitched on every key of the chromatic scale, enunciating sounds and words of every description, with the loudest force that lungs can give, make so clamorous and heterogeneous a tumult, "that with the hurly" the dead, lying in the churchyard without, almost awake. The stentorian rapidity with which each scholar of each class succeeds his bawling predecessor in the hubbub, sends the discordant echoes flying round the school-room, like a chase of invisible demons. The spelling over, a short reading-lesson follows, of a similarly ludicrous character.

Passing without remark the style of articulation of the English tongue

in this seminary of learning, I may be permitted to say a little of the mode of its pronunciation current here. As may be anticipated, it was somewhat different from that of our present unabridged Websterian and Worcesterian times. Comptroller was pronounced with a "Comp"—and why should it not be? Arithmetic was called "A-rith-mat'-ic;" Algebra, "Alge'-bra;" Minus, "Min'-us;" Conflagration, "Con-flag'-er-ation," and Hypothenuse, "Hip-o-the-nuse."

Invariably, in a manner somewhat similar to that in which the unfortunate matutinal crowd of malefactors is brought up before the "Tombs" Justice, a large number of the scholars were placed before the master every morning on his arrival, to receive from three to six stinging muscular blows on the hands, with the cat or ferule, for the various shortcomings reported by their monitors. It not being customary to go into any investigation as to the guilt of those arraigned, it took but a short time to get through with this indispensable morning exercise.

The classes were arranged in the following order. The primary class was called the "Sand class." This had white sand spread out on a horizontal desk, with moulding on the edges to keep it from spilling on the floor; and on this economical sort of stationery, similar to Archimedes demonstrating his proposition on the ground while Syracuse was being stormed, the least advanced scholars exercised their intellectual and artistic powers, learning, at the same time, how to name and draw the letters of the alphabet. Next came classes in ascending order, that wrote down words and sentences on ruled slates; then classes that spelled the long hard words, "Involuntary" and "Unreasonableness," and wrote in copy-books; then classes that ciphered in Addition, Subtraction, Multiplication, and Division—even "Long Division." The Fraction and Rule of Three boys came next in order; then the few who had reached as far as the intricate and deep mysteries of the Square and Cube Root,—each class diminishing in numbers as it ascended the "Hill of Science," till, finally, we arrive at a solitary student sitting alone in his sublime and sacred insulation, who has reached the Ultima-Thule of all learning—"Mensuration"—"Hawney's Mensuration," I think it was called,—a work which was a sort of companion of "The Gough," and like it, I believe, written in Ireland, at any time since the building of the Round Towers, by some traditional personage, regarded among the people of that country as the Irish Euclid. These two books were considered the greatest mathematical works in the world. This sequestered, and, we may imagine, sad young man (for it is to be presumed that having conquered all the kingdoms of learning, he sometimes wept because there were no more of the same sort to conquer), standing on the line which divides all science from nescience, as we might expect, was the wonder and admiration of the school. Nay, he always received a call from the patrons of learning who visited us, to

be discoursed with and eulogized, often hearing the remark from them, that his great acquirements would forever be an honor to his name. When through mensuration, the student must of course quit school, because there was nothing more to be learned. Several of these high graduates resided in the neighborhood. It was a common remark that there was danger of their going crazy from their immense learning. They were looked upon with profound respect by the *literati* of that vicinity, and were a sort of privileged personages, having, as it were, the "Freedom of the City." If a student, not yet a sufficient adept to perceive the practical application of his abstract speculations on the ten digits, inquired the object of studying numbers, he was told that it was "to 'learn' him how to keep store,"—an explanation perhaps no less sensible than the modern one, that the design of studying mathematics is principally to "discipline the mind." Each mathematical scholar, from those in Addition to him who had reached the lonely peak of Mensuration, carefully transcribed his daily labors from the slate into a large copy-book, in order to preserve them as permanent records of his scholarship. This was deemed the true method of storing up knowledge. If one of those registers of lore had been lost, there would have been so much education gone from the owner.

The morning exercises of spelling, reading, and whipping over, the subsequent performances of the day commence. The great Head-centre of the school takes his high seat behind his desk, his cat-o'-nine-tails and ferule by his hand. He now assumes his regular functions of the day. The scholars in their seats, with down-turned faces and upturned eyes, regard him with furtive glances. A thrill of fear runs through their nerves as they behold their tyrant mount his chair of state, and with a piercing, savage look, survey the petty realm over which he rules with so cruel and irresponsible sway. Each monitor takes his position at the head of his class. The dictator stands at the head of the "Sand-class," ready to promulgate the lore of the day. The master rings his little bell. The monitors then unanimously give the order, "Hands behind!" On the instant every boy has his left palm enclosed in his right behind his back, in a sort of self hand-cuffed state, and woe be to him who is not paying attention when the order is given, or is tardy in obeying it. He is immediately "sent up" to have his attention concentrated and his movements quickened. The dictator now commences: "First of the first class, *A*," giving the sound of the letter in what an elocutionist would call the "Radical Stress," at the same time turning the wooden block at the top of the vertical shaft, that the letter on it might be seen by those who were to copy it. Immediately, hands fly from behind, and each little urchin seizes his wooden style and engraves the symbol on the sand. That done, the monitor again proclaims: "Hands behind!" and in a moment, hands are as they were. The dictator paces to the next class, and continues:

"Second of the second class, May!—M-a-y!"—first enunciating the word, then spelling it, and turning the wooden block as before. Hands instantly unlock themselves from behind, grasp pencils, and write down the word quickly on ruled slates. At the next word of command, hands again revert to their places; and the dictator thus proceeds from class to class, getting into words of dissyllables, trisyllables, and polysyllables, and finally into sentences, to the end of his beat, the scholars in his rear keeping "hands behind" till he returns to dictate to them a new lesson in a similar manner; and thus continue the main exercises of the day. The master, during this time, may have come down from his seat with his portable "cat" in hand, and be engaged in whipping fractions into the heads of those of whom he has immediate charge, or making others dance Irish jigs about the floor, on complaints made by their monitors.

The closing lessons of the afternoon session were from the Catechism. By the centripetal force of this study, the classes gravitated into circles round the hall. Each monitor took his stand in the centre of his ring, and with Catechism in hand, propounded awful questions, which were quickly answered with an emphatic and defiant air, as if to say, "Who's afraid?" Let me not be thought irreverent if I here repeat a few of the questions and answers which, after the lapse of forty years, I still remember. Q. "Why did God make Hell?" A. "To punish the devils and bad angels." Q. "Can any one come out of Hell?" A. "No, out of Hell there is no redemption." Q. "Was the Hell into which Christ descended at the time of his death the Hell of the dammed?" A. "No, He descended into a place called Limbo;" and so on, each answer given by every one of the class at the same time with the most positive assurance, as if we considered it but trifling to put questions to us respecting truths so self-evident.

After the English catechetical exercise, we were put through one in Latin in the same style. We now felt a pride in being in the ancient sacred classics. In this branch of study, as well as in the English Catechism, we were all the veriest adepts. No matter whether a boy could read or not, he was taught, and he knew, both the Latin and English Catechism. The Latin performance was truly appalling to eyes and ears unschooled to it. Babel would be no adequate comparison. We would anticipate the monitor, so that questions and answers came at the same time without the remotest conception, on our part, of the meaning of either. Both were in Latin, and we had no translation into the "vulgar tongue." In fact, we didn't know that there could be such a thing; for we never in our lives heard of the word "translation." We took it for granted that Latin could be nothing but Latin. I cannot venture to attempt to represent, by written characters, the pronunciation we gave the language. This can be imagined better than described. Each class, however, had a pro-

nunciation peculiar to itself, varying with the provincial accent of those by whom it had been instructed. Accuracy in this element of the study was not deemed of great importance. The physical attributes, a good brazen throat and length of breath, were most appreciated in this exciting exhibition. About one hundred voices, in loud, full, and rapid blast, blending all together in one wild conglomerate mass of gibberish, produced little short of a complete Pandemonium. The most erudite Latin scholar could not have had more certainty of being proficient in the language than we had. We believed we were complete in this branch of learning. We thought the little book contained all there was of it, and we knew all there was in the book. This is the way we studied Latin. Herbert Spencer says, "There is no error without its soul of truth in it." If we should search for so subtle an element in the foregoing method of studying the English and Latin Catechism, it might be found in the vocal training we incidentally acquired.

Having said all that space will permit of what, by courtesy, we will call the intellectual and religious parts of the system, we come to the governing part, or means employed to secure the acquisition of these branches of education, and to reform and purify the whole character of the student. This was nothing but *blows! blows! blows!* Moral suasion was a principle unknown to this institution in the education of youth. Terrible flogging was really believed to be an indispensable requisite for making a good boy out of what was esteemed a bad one, and a scholar out of a dunce. Indeed, it was regarded so potent a panacea, that it was thought wise to administer it as a preventive as well as a curative of moral obliquity or intellectual dulness. I have heard even parents, coming to inquire about the progress of their children, enjoin the master, in presence of the whole school, to "Flog them! Flog them!" In truth, the chief function of this pedagogue was to beat the boys; he was engaged in this employment the best part of his scholastic term. After the lapse of forty years, I can still see him walking up and down the long school-room with a stern air, the "cat" under his arm, with the lashes dangling behind him, and the scholars looking askance at him, as he passed their class, fearing to get a cut over the head for some misdemeanor they were not aware of having committed. This scourging instrument was never out of his reach; he carried it with him as faithfully as a sentinel on guard does his arms. The monitors were petty tyrants to the boys under them, and could have them whipped whenever they pleased. We had to buy their favor with presents to keep them from getting us whipped for nothing. A complaint made by one was indisputable. If the accused attempted a denial or an excuse, it was an outrageous act of insubordination; it only aggravated his presumed guilt and increased his punishment. When a charge was to be made, the monitor, as he walked forward and back, be-

hind his class, like a policeman on duty, would hold up his hand at full length. Then from the dread master's high seat came the fearful inquiry, "What's the matter?". "Such a boy has whispered, or looked around, or hadn't hands behind," would be the reply. "Send him up," was the command, and up went the poor trembling boy to receive several lashes from the "cat." If a boy instinctively drew back his hand when struck at by the master, two cracks were given for one.

The greatest crime known to the law of this school was to play truant—or "hooky," as it was called—or to be absent from church on Sunday without leave. We were obliged to assemble in the school-house on Sundays, and from there march to church under the monitors as captains, and the master as colonel of the regiment. When either of the above crimes was committed, "the Fool's-cap," the "Hangman's-cap," the two handed cat-o'-nine-tails, and "The Iron Bar," came into play. When the latter engine of torture was used, the offending boy was made to mount upon it with his bare feet. He was allowed no means of balancing himself but the dexterity of keeping his equilibrium by the support of his feet alone. If he fell off, or let one foot touch the platform, the master, sitting within striking distance, would lash him on again with a savage stroke of the "Cat." The grimaces of the poor victim, the writhings and contortions of his body, while undergoing this punishment, expressed how painful was the torture.

Frequent exhibitions of punishment occurred when all studies were suspended for the time being, and the whole school required to take part in the demonstration. For instance: A boy, having the "Fool's" or "Hangman's" cap on, was marched under guard to the lower end of the hall and made to get up in the recess of one of the windows. The scholars were ordered to turn and face him. The master then gave the order, and the whole assemblage, with fingers pointed, commenced to deride and insult their school-mate in every conceivable manner, and to set up so horrible a hissing at him, that one might have thought this academic place had suddenly been turned into a serpentry of the whole Ophidian race. After this disgusting act of the performance, the boy was taken down, probably to be placed on "The Iron Bar," or to receive a severe beating. I have frequently seen the victims of these and other occasions, stripped to indecent nakedness, and unmercifully whipped on their bare flesh.

It would be impossible for one unschooled to the belief, to conceive with what a superstitious abhorrence a boy, while having on the "Fool's," or "Hangman's" cap, was regarded by the rest of the scholars. He was unclean; he appeared to be under a terrible ban; he was anathematized for the time being. But the most cruel and barbarous part of all this system of moral discipline is yet to be described.

When the huge cat-o'-nine tails was taken down from the wall, a bloody and shocking scene was to be enacted. The victim, with the "Hangman's cap" placed upon his head, and denuded of his jacket, vest, shoes and stockings, was placed on the "race-course" round the hall. The master took his stand a few feet from him, with his tremendous whip held in both his hands. Then dealing the boy a heavy blow, he sent him with a leap and a shriek upon his race. Pat, pat, pat, you heard his bare feet go upon the floor as he sped on. Having got round to the point from which he started, the monster, waiting for him with uplifted whip, gave him another lash on the back as he passed. Another leap and heart-piercing shriek came from the suffering boy; and thus, from heat to heat around the room, the blows were repeated till you could hear his loud breathing mingled with his cries and groans as he pursued his course. When he became exhausted and nearly ready to fall, the punishment ceased. This last process of torture was frequently but the wind-up of a series of punishments gone through by the same person on a single occasion.

The good-natured priest up stairs would often visit the school. When he entered, every head would bow. Seated by the master's side, and casting his eyes about the room, he seemed to view with much complacence the scene before him. It was undoubtedly gratifying to him to contemplate those youthful minds—his growing nursery of souls, germinating so beautifully and developing so harmoniously under the intellectual, moral, and religious system of instruction with which it was their rare fortune to be favored. He would talk to us of the advantages we enjoyed, and tell us how thankful we should be to our kind teacher for the sacrifices he made daily for us; and particularly to praise God for all these blessings which He poured out upon us. Poor Martin Doyle! poor "Johnny" Cunningham! poor "Mike" Murphy! and the rest, whose names I have forgotten, if you are living in this or the other world, say, were you blest, made better boys, or did you become better men, by the discipline of those suffering school-days?

But these transactions belong now to the dead and buried past. They were the natural functional expression of the intellectual and moral development of the time and the locality in which they occurred. There are many grades of civilization existing at the same time in the same city, as distinct as if they were thousands of miles apart. The cruel master acted in accordance with the opinions and desires of those to whom he was immediately accountable. He no doubt thought he was doing his duty. It would be unfair to pass judgment on the administrators of the system by the standard of right and the improved methods of education of to-day. Let us be charitable enough to think they did as well as they knew how. I forgive them. They have now all passed away. The grim school-

master is dead; the good clergyman is dead; the sexton, who digged the graves in the churchyard without and tolled the bell, is dead; the whole "Board" is dead; the whole neighborhood is dead;—a new generation that know nothing of those tragic days, now live around the spot. And the hundred and fifty scholars, where are they? I never heard that any one of them rose above the common walks of life. Many grew up to be hard cases. Having graduated at the severest of penitentiaries, they found no terror in the idea of State-prison. I know not that one of all that number except myself is now living. If any still remain above the earth, within the precincts of where I live, the marks of relentless time and the cares of life, have so transformed the external identity of both them and me, that we do not know each other. I come to-night, like the solitary "last man" of the Club—I call the roll, but none respond.

AMERICAN EDUCATORS DECEASED IN 1868.

I.

William Mitchell Gillespie, LL.D., a graduate of Columbia College, class of 1834, subsequently a student and tourist in Europe for ten years, the author of "Rome, as seen by a New Yorker in 1843–44," was, in 1845, appointed professor of civil engineering in Union College, a position for which his studies abroad had peculiarly fitted him. He published, the same year, a practical manual of road-making, entitled "Roads and Railroads." He published also an able treatise on Land Surveying, and an abstract of some of Auguste Comte's works, under the title "Philosophy of Mathematics." He continued in the professorship of civil engineering till his death, a period of 23 years. He died of pulmonary consumption, Jan. 1st, at New York, aged 52 years.

Judge Albert Gorton Greene died at Cleveland, Ohio, Jan. 3d, aged 86. Judge Greene's contributions to education were confined to a brief professorship in Brown University, the drafting of an admirable school law, and the reorganization of the schools of the city of Providence under it. He was a genial and brilliant writer, but seldom chose to let his productions come before the public eye. One of his poems, written at the age of sixteen, "Old Grimes is dead," will be immortal with school-boys.

William B. Bradbury, perhaps the most popular music composer, teacher, and compiler of music for the young, of modern times, died Jan. 7th, at Montclair, N. J., aged 52. Mr. Bradbury possessed rare power of

adapting his music to the ear and mind of childhood. His juvenile music-books for secular and Sunday schools have sold by millions.

CHARLES C. JEWETT, for some years a professor in Brown University, and subsequently assistant secretary and librarian of the Smithsonian Institution and Superintendent of the Boston City Public Library, died suddenly at Braintree, Massachusetts, on the 9th of January, aged 52 years. He was graduated at Brown University, in 1835. He subsequently studied theology and oriental languages at Andover, Massachusetts, being for a time librarian of the Theological Seminary Library. He developed such aptitude for bibliographical pursuits here, that he was called, in 1843, to Providence to arrange the college library and make a catalogue of the books. The same year he was appointed Professor of Modern Languages and Librarian of the University. His duties were performed with great zeal and success from 1844 to 1848. On the opening of the Smithsonian Institution he was chosen Assistant Secretary and Librarian, and remained there for several years, rendering distinguished services to the Institution and the country. In 1857 he accepted the position of Superintendent of the newly established Boston Public Library. He was the author of several brief manuals relating to bibliography.

Right Rev. JOHN HENRY HOPKINS, D. D., D. C. L., Bishop of the diocese of Vermont, died at Rock Point, Vermont, Jan. 9th, aged 76. He was born of English parents, in Dublin, Ireland, his parents emigrating to this country when he was about eight years old. He was educated chiefly by his mother. After trying his hand at drawing, and in the manufacture of iron, he began the study of law, in 1817. Six years later he quit the bar for the ministry, and was ordained in 1824. In 1831 he became assistant minister at Trinity Church, Boston, and Professor of Divinity in the Episcopal Theological Seminary of Massachusetts. In 1832 he was elected Bishop of Vermont. Here he established a school for boys, employing poor clergymen and candidates for orders as teachers. His heavy expenses from this enterprise embarrassed him seriously for many years. After relinquishing this school, he projected and established the Vermont Episcopal Institute, a semi-theological school, over which he presided until his death.

Rev. JOHN CUTLER NICHOLS, a Congregational clergyman of Connecticut, who for nearly twenty years had been at the head of a select boarding-school for boys, at Lyme, Connecticut, died in that town Jan. 9th, aged 67.

Miss ABIGAIL C. HASSELTINE, an accomplished teacher, sister of Ann Hasseltine Judson the first wife of the missionary, for fifty years (1815–1865) Preceptress of Bradford Female Academy, died in Bradford, Mass., Jan. 13th.

January 26.—JAMES MOTT, husband of the Quaker preacher, Lucretia

Mott, founder and organizer of the (Hicksite) Friends' College at Swathmore, near Philadelphia, died in Brooklyn, L. I., aged 80.

On the same day, AMOS DEAN, LL.D., a profound scholar and eloquent writer, professor in the Albany Law School from its origin, and Professor of Medical Jurisprudence in the Albany Medical School for 21 years, died in Albany, aged 65.

February 3.—JAMES GILBOURNE LYONS, D. D., LL.D., a preacher, poet, and teacher, a native of England, and a graduate of Cambridge, died at West Haverford, Pennsylvania. He came to this country in 1844, and after two years' service as rector of St. Mary's, Burlington, N. J., removed to Philadelphia in 1846, and commenced teaching the classics. His thorough classical attainments, and his aptness at teaching, made him very successful as an instructor. He had been for many years the principal of the Haverford classical school.

February 10.—Rev. JOHN F. RICHARDSON, professor of Latin Language and Literature in the University of Rochester since its organization in 1851, a very thorough and critical scholar, and the author of a valuable work on Latin pronunciation, died in Rochester, N. Y., aged 60.

February 24.—GEORGE WASHINGTON HALL, a teacher long identified with academic instruction in New York city, a graduate of Yale College, class of 1803, died in Troy, in his 86th year. For a few years after his graduation he was engaged in preaching. In 1815 he commenced teaching in Georgia. The two following years he taught in Boston. In 1818 he removed to New York and opened the Mount Vernon School for boys, at Harlem. In 1820 he was compelled to go South for his health. In 1821 he returned to New York and established a collegiate boarding-school for boys, which became very popular, and which at General Lafayette's suggestion was named The Washington Institute. Here he remained, except for a brief period, for fifteen years, when his health so completely failed as to render him unfit for any continuous employment.

March 2.—WILLIAM GIBSON, M. D., LL.D., an eminent surgeon, medical professor, and author, died in Savannah, Ga., aged 80. For a period of about forty years, he was professor of the Principles and Practice of Surgery, first in Baltimore and subsequently in Philadelphia.

On the 22d of March, Rev. JOEL H. LINSLEY, D. D., eminent as a scholar, a preacher, and an instructor, died at Greenwich, Conn., aged 78. He was for two and a half years (1812–1815) tutor in Middlebury College, his *Alma Mater*; then, after some years' study and practice of the law, a highly-esteemed pastor in Hartford, Boston, and elsewhere; from 1835 to 1845, the laborious and successful president of Marietta College, Ohio; and from 1847 to 1868, again a pastor of the Congregational Church of Greenwich, Connecticut.

On the same day, died in Boston, Massachusetts, the Hon. HENRY

HALSEY CHILDS, M. D., Lieutenant-Governor of Massachusetts in 1843, for 41 years professor of the Theory and Practice of Medicine in Berkshire Medical College, for 26 years president of that institution, and during a considerable part of this time, professor in the Medical Colleges of Woodstock, Vermont, Willoughby and Columbus, Ohio. He was an able writer and an eloquent speaker. His age was 85 years.

Rev. WILLIAM SMYTHE, D. D., for 50 years a teacher and for 43 years Professor of Mathematics and Natural Philosophy in Bowdoin College, died at Brunswick, Me., on the 4th of April, aged 71 years. A man of rare energy and devotion to his work, and of the most unflinching industry and perseverance, he has left behind him few equals as a successful teacher. He was the author of a series of mathematical works.

April 5.—Rev. HERMAN M. JOHNSON, D. D., LL.D., President of Dickinson College, Carlisle, Pa., died at Carlisle, aged 53. For 29 years he had been a college teacher: as professor of ancient languages in St. Charles College, Mo., for three years (1839–42); the same in Augusta College, Ky., for two years (1842–44); and in the Ohio Wesleyan University, at Delaware, O., for six years (1844–1850). In 1850, he was elected professor of philosophy and English literature in Dickinson College; and after ten years of service, was chosen president of the college, and professor of Moral Science. He was a popular author and reviewer, his style being marked by clearness, conciseness, and originality.

April 7.—Rev. ROBERT W. CUSHMAN, D. D., for many years engaged in founding and conducting Female Seminaries of high character, died at South Reading, Mass., aged 68. He was a graduate of Columbian College, D. C. He founded and managed a Seminary for young ladies for some years in Washington. In Philadelphia he established and conducted for twelve years the "Cushman Collegiate Institute," and in Boston a Seminary of high grade. He was a pastor for some years in Poughkeepsie and in Boston, and the author of several popular works.

April 8.—Rev. FRANCIS JAMES LUNDY, D. C. L., Oxon., an Episcopal clergyman, classical teacher, and author, died in Newburgh, N.Y., aged 54. He was born in England, and educated at the University of Oxford. Soon after taking orders, he emigrated to Canada (in 1836), where he taught for several years in high-schools and in the Provincial University. He attained a high reputation there. In 1865 he removed to the United States, and engaged in teaching the classics. After a time he became rector of an Episcopal Church at Elizabeth, N. J., and subsequently of one at Newburgh.

April 14.—Rev. H. L. BAUGHER, D. D., a Lutheran clergyman, President of Pennsylvania College, Gettysburg, Pa., died in that town aged about 63. He had been a teacher in Gettysburg for 38 years. For 36 years of that time he was connected with Pennsylvania College—18

years (1832–1850) as Professor of the Greek Language and Belles-Letters; and 18 more (1850–1868) as President and Professor of Moral Science. He was an able preacher and literary and theological writer.

April 25.—CHARLES P. BRONSON, a noted lecturer on elocution, philosophy, etc., and author of several text-books, died in New York city, aged 67.

May 4.—Miss MARIANNE RIPLEY, a distinguished teacher and promoter of education, a sister of George Ripley of the N. Y. *Tribune*, died in Milwaukie, Wis., aged 71 years. She was a lady of remarkable ability and attainments. After acquiring, as her father's assistant in mercantile affairs, great skill in practical business, she engaged in teaching, first in Massachusetts, and afterward, about 1836, at the West. She subsequently engaged in the Brook Farm enterprise with her brother and other friends, and on its failure resumed her position as teacher. Compelled by ill health to relinquish her school, she never lost her interest in educational matters.

May 5.—Professor CHARLES GRAFTON PAGE died at Washington, D. C. He was a graduate of Harvard University, class of 1832. After studying medicine in the Boston Medical School, he removed to Virginia, where he practised his profession. About 1838 he was appointed professor of chemistry in Columbia College, D. C., a position which he retained for many years. In 1840 he was made an examiner in the Patent Office, the duties of that position being then extremely onerous. He continued his connection with the Patent Office till his death. For many years he devoted a large portion of his time to the study of the phenomena and evolution of electricity, having in view not only the scientific bearings of the subject, but its practical application as a *motive* power. In these investigations he contributed largely to the knowledge of electrical currents, which made the Atlantic Cable a possibility. He was the author of a treatise on electrical science, and of many papers on that and kindred subjects.

Rev. JOHN NEWTON BROWN, D. D., died at Germantown (Philadelphia), Penn., May 15, aged 65. Though for forty years an invalid, he accomplished a vast amount of intellectual labor. He was graduated at Hamilton Literary and Theological Institute (now Madison University) in 1823, and for the next fifteen years was engaged in the ministry—except two years, in which he was in Boston preparing the "Encyclopædia of Religious Knowledge." In 1838, he was appointed Professor of Theology at the New Hampton Literary and Theological Institution, where he taught with great ability for six years, when failing health compelled his resignation. In 1849, he became Editorial Secretary of the American Baptist Publication Society, and passed the remainder of his life in editorial labors and authorship.

May 20.—Rev. GEORGE JUNKIN, D. D., LL.D., died at Philadelphia, Pa., aged 78. He was born in Kingston, Cumberland County, Pa., was educated at Jefferson College, where he was graduated in 1813. He studied theology under Dr. John M. Mason, in New York city, was ordained in 1818, and remained in the pastorate, though teaching and editing a paper a part of the time, till 1830; was Principal of Pennsylvania Manual Labor Academy, at Germantown, Pa., 1830–1832; President of Lafayette College, Easton, Pa., 1832–1841; President of Miami University, 1841–1844; recalled to the Presidency of Lafayette College, 1844–1848; President Washington College, Lexington, Va., 1848–1861, when the secession of Virginia compelled him to leave the College and his home and property. From 1861–1868 he was Professor Emeritus of Lafayette College. He was the author of numerous works, most of them on theological topics.

Rev. GEORGE RAPALL NOYES, D. D., died in Cambridge, Mass., June 3d, aged 70. He was fitted for college at Newburyport, Mass., entered Harvard College, in 1814, and was graduated in 1818 with high honors. After his graduation, he taught the Academy at Framingham for a year, and then entered the Divinity School, where he was graduated in 1822. For the next five years he remained in Cambridge as private instructor and College Tutor. In 1827 he became pastor at Brookfield, Mass. Thence he removed to Petersham in 1834, and in September, 1840, entered upon the duties of the Hancock Professorship of Hebrew and the other Oriental Languages in Harvard University, in which he continued till his death. He was also, from 1846, a Professor of Sacred Literature in the Divinity School. He was regarded as one of the best Hebrew and Greek scholars in the country, and was well versed in other Oriental languages.

June 9.—MARVIN MANVILLE MARSH, M. D., died at Carson, Ohio, of injuries received from being thrown from his carriage. He was a graduate of Hamilton College, Clinton, N. Y., class of 1836; was Principal of an academy at Manlius, N. Y., for some months, then of one at Eaton, N. Y., for four years. He was graduated M. D. from Albany Medical College in 1841, practised medicine for two years, when, being compelled by severe illness to abandon his profession, he returned to teaching in Onondaga County. He was appointed by the Sanitary Commission its Chief Agent and General Inspector in the Department of the South, in 1863, and gave himself to its work with great zeal up to the close of the war. He was then for some months at the head of the Lincoln Home in New York. He remained in New York till 1867, when he removed to Carson, Ohio. He was appointed a professor of Applied Chemistry in the Rutgers Female College, New York, but never entered upon the duties of the professorship.

THE VENTILATION AND WARMING OF SCHOOL-HOUSES.

II.

THERE have been many school-houses built within the last few years, in which great reliance appears to have been placed on contrivances for artificial ventilation. A great difficulty with most of these contrivances is their entire inadequacy. They seldom have more than one-tenth the capacity necessary to accomplish the object for which they are designed. It seems desirable, therefore, for the present, and until we can bring our artificial arrangements much nearer perfection, that we should rely more upon opening doors and windows at frequent intervals, for thoroughly purifying the air of class-rooms.

There are many conditions of the atmosphere—as, for example, in warm, still days—when it is quite impossible to provide substitutes equal to window-ventilation. On the other hand, there are many days during which the condition of the atmosphere renders it very improper to have the windows open during school-hours; therefore our arrangements for artificial ventilation should be so perfected as to be entirely sufficient on such occasions.

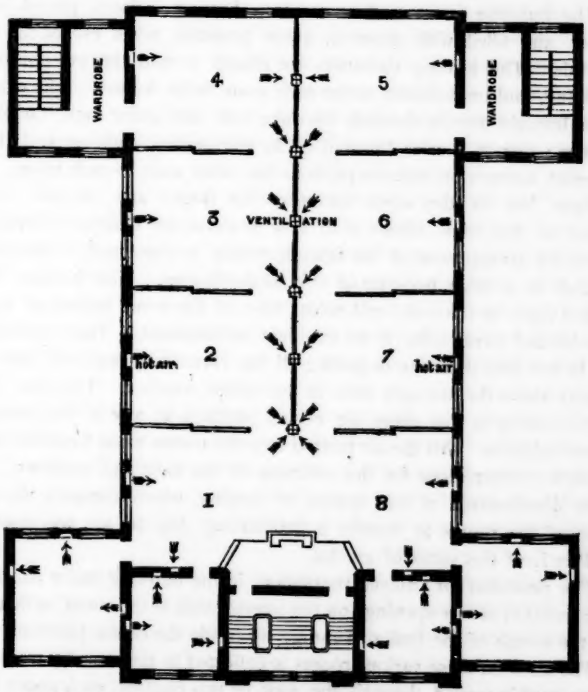
The subjoined cut represents the plan of the second floor of Public School No. 9, Brooklyn—an elegant new school-house facing Prospect Park. This building has been selected for examination, because it is one of the latest, and also because it expresses what are thought to be the most advanced ideas on school architecture now generally before the public.

By reference to the plan, it will be seen that there are eight class-rooms in the main building, separated by movable glass partitions. These partitions being partially removed, the several rooms are turned into one room for united exercises, as when the school is assembled in the morning. At other times, the partitions are drawn, dividing the floor into seven separate class-rooms, the eighth and first being used for two classes without dividing partition. Six of these rooms have openings to the external air only on one side, and four are bounded on the other three sides by class-rooms, generally crowded and necessarily more or less foul.

Now, every school-room ought to have, if possible, external windows on four sides for the admission of light, air, and the purifying and vivifying rays of the sun. If there is a blank wall on one side, it is bad; if on two sides, it is worse; if on three sides, it is very bad indeed. But what shall we say of a room hemmed in—not by three blank walls merely—but *by three other foul rooms!*

If we could see the fetid, poisonous air oozing through the cracks from

one room to another, and fully realize the fact that the flushed cheeks and throbbing temples of the children and teachers are caused by their breathing the foul air; that the children and teachers, thus confined, are being subjected to the same kind of torture, only in a little milder form, as the victims of the Black Hole of Calcutta,—I say, could we fully comprehend the actual reality as there existing, we should involuntarily exclaim *horrible!*



PLAN, SECOND STORY, SCHOOL-HOUSE No. 9, Brooklyn, N. Y.

This system of dividing a large assembly-room into a number of small class-rooms by glass partitions seems to be a favorite plan in many places. But can it be possible that the advantages to be gained by the few moments' united exercise in the morning, or the gratification of the pride of the school directors in seeing at one glance so large a number of children confided to their tender care—can these advantages counterbalance a fraction of the suffering and ill-health produced by this system of crowding together such large numbers of children? especially when the evil of overcrowding is again greatly aggravated by the cross-partitions in both direc-

tions, which so completely cut off all through circulation of air. It does seem as though the objections to this plan are such that its adoption cannot be too strongly condemned. There may be a possibility of contriving artificial arrangements for ventilation so perfect as to overcome these objections, yet there is scarcely a probability of its being done.

Let us examine the arrangements in this building for ventilation, and also for warming, as these two subjects are closely connected.

The building is warmed by cast-iron heating surfaces, placed in the cellar, and filled with steam at a low pressure, never exceeding three pounds. The heating chambers are placed around the exterior of the building, and immediately under each room to be heated. The external air is brought directly through the outer wall and under each "stack" of heaters; thence it rises through or by the heating surfaces, and, being warmed, ascends by separate pipes in the outer walls to each room. One register lets in the warm air near the floor; and another, placed about six feet high, allows it to flow in above the children's heads. As far as the arrangement of the heating surface is concerned, it is superior to that in a large majority of our school-houses. The placing of the heated pipes on the outer and colder sides of the room instead of on the interior and warm side, is an excellent arrangement. There will probably be but little difficulty in getting all the warmed air required (and of a quality above the average) even in the coldest weather. The great defect in the heating is that there are no hot surfaces in any of the rooms for direct radiation. All the air poured into the rooms must therefore be hot enough to compensate for the coldness of the walls and windows. The great disadvantage of this system of heating, which compels the occupants of the rooms to breathe a debilitating, dog-day air, was discussed in Part I. of this series of articles.

The provision for artificial ventilation, in the building under consideration, consists in two openings on the interior side of the room, with a pipe for the escape of the foul air running up inside the centre partition.

The air from these various rooms is collected in the attic by numerous pipes, and is carried through the roof by two ejectors, each about three feet in diameter. The area of a section of these pipes is a fraction over seven square feet, or fourteen square feet for the two. As there is no extra heat in any of these ventilating ducts, the average velocity of the foul air in passing through can scarcely average more than two hundred feet a minute, especially on mild, damp days, when there is but little motion in the external atmosphere. Fourteen square feet of outlet would discharge at this velocity twenty-eight hundred cubic feet of air a minute—*or two and one-third cubic feet each* for twelve hundred children.

Now, as we breathe about a quarter of a cubic foot of air a minute, and the exhaled breath contains about one hundred times the amount of

carbonic acid that there is in common air, the breath of one person will saturate a constant supply of twenty-five cubic feet a minute, with double the quantity of carbonic acid that is contained in pure air.

This certainly is quite as much of other peoples' breath as it is wholesome to breathe. Add to this the exhalations from the surface of the body, and it will be seen that a constant supply of thirty cubic feet a minute for each occupant of a room is none too much. To be sure this would only be about twelve times the amount allowed in this schoolhouse, but the manner of distributing the supply has a great deal to do with its efficiency.

As will be seen, by reference to the plan, the air of each room is let in at two points, the highest but a few feet above the floor and discharged at two, both at the floor. The children sitting close to these outlets get the concentrated foul air of the others. But suppose the room becomes insufferable (as it soon must if depending on artificial ventilation alone), and the windows are lowered to let in fresh air; this cold air, being heavier, falls to the floor; and flowing along over the feet of the children to the outlets, keeps the floor and the feet cold, without rising so high as the zone of respiration. There should be some arrangement made in schools thus ventilated, to enable the scholars to breathe through their feet; or if they could be taught to sit on their heads, it would be a good arrangement, physiologically.

Although well-distributed outlets for the escape of the foul air from the floor of a class-room is of great importance, yet there is a large portion of the time in which the relative conditions of the contained air and that which is entering, are such as to require the escape of the foul air from the top of the room. In cases like the building under examination, where the whole heat is derived from currents of warmed air, these upper openings must be closed at times to prevent the too rapid escape of the heated air. But it seems to me to be possible to have the walls and floors of a room so warmed that the upper ventilators as well as those at the floor might be kept open at all times. A steam radiator or a stove under each window would assist very much in accomplishing this desirable result.

"Physical and Intellectual Development of Youth by Electricity" was the subject of a paper lately read before the British Academy of Medicine. From the fact that vegetation is quicker and richer in its growth when electrified, than when left to nature, the author held that a similar result might be obtained in the animal kingdom. He instanced five children, ranging in age from four to sixteen years, who, through the application of electricity, attained a remarkable development, both physical and intellectual. It would be a good plan to try the experiment in some of our schools—beginning with the teachers.

THE ADVANTAGES OF GREAT CITIES FOR PROFESSIONAL STUDY.

IN choosing a place of education, whether college or professional school, the advantages of different ones are so evenly balanced, that the decision, in most cases, is made from purely accidental reasons. Intrinsically, there is not a very wide difference among our colleges and our professional schools. With rare exceptions, they are modelled on the same plans, pervaded by the same ideas, officered by the same class of men, and turn out the same average of students. Now, since this is so, it is fair for us to compare their merely external advantages, which make a difference among them well worth considering.

We may assume that for a college where the students are not yet mature, and where the studies can be pursued easily enough with the aid of text-books and a moderate library, the best location is in a country town, apart from the distractions and temptations of city life. But the same argument will not hold good with regard to professional schools. The students are now men, able to take care of themselves, if they ever will be. Moreover, they are just at that age when young men wish to and ought to see life. Residence in a great city is the next best thing to foreign travel. It does much toward making a man cosmopolitan, toward wearing off the rough provincialism and the rawness of youth that are apt to cling to the average student. And this a great city does, even if he merely lives there and goes about his business with little thought of his surroundings; and far more does it do this if he takes pains to get all the civilizing and refining influences that he may have in a metropolis. He meets a great variety of men. He probably will see something of all grades of society, and something of many nationalities. He learns, too, that he is a very small atom in the tide of humanity that ebbs and flows all around him; that his ideas, his opinions, his very existence, are of very small account after all. In short, he gets the conceit taken out of him amazingly, and begins to get that true self-knowledge which is the beginning of all wisdom.

Moreover, in the intense life of a great city he learns to work rapidly and effectively. Truly, if "fifty years of Europe" is better "than a cycle of Cathay," a decade of New York is worth a century of "Sleepy Hollow:" there is more real work done. The impulse obtained in two or three years of active city life may last a lifetime. Even trade, usually so narrowing to the mind, becomes a liberalizing influence in a city like New York, by the scale on which it is conducted and the amount of enterprise and capital required to manage it.

Every great city is a centre, not only of business activity, but of intellectual life—at least of a certain kind. Usually, even the highest intel-

lectual life, that which produces literature, is found in a metropolis. But even where this is wholly or partially deficient, there is a certain amount of intellectual life of the lower kinds. The city is the centre of news, and therefore of newspapers: of politics, and therefore of public assemblages. Great men, and notorious men, can be seen on the streets. We need not trust to reports so much, for we can see many things with our own eyes. Many illusions are thus dispelled, many errors corrected. Books and Magazines circulate more freely, libraries are more easily reached, and better ones. Lectures are more frequent, and all the machinery of intellectual life runs more rapidly and with more force. And for the study of the fine arts there is scarcely any opportunity except in great cities.

There are great and peculiar advantages of city life; but there are in addition certain special advantages possessed by professional schools in a great city. Our professional schools hold the same relative position to our colleges, that the universities of France and Germany do to their colleges and gymnasia. And it has been found that universities thrive best in great cities. All the important universities founded in this century, Berlin, London, Christiana, and many of the most flourishing older ones, like Paris, Edinburgh, Dublin, Copenhagen, Vienna, are in great cities. The same reasons that hold in Europe, hold here. A university without a library, is like a man without a head; and a good library can be collected more easily in a metropolis than elsewhere. Here, also, are to be found other great libraries, that supplement the deficiencies of the university collection. Again, in a great city, there are collateral advantages for a practical acquaintance with each of the professions;—for the lawyer, in the courts held almost daily; for the clergyman, in the great preachers and great charities; for the physician, in the great hospitals and frequent clinics. But more than all these, the professors are almost sure to be superior men. A country university may keep one great man: a city university will be sure to have several. For, allowing other things to be equal, which is not the case usually, the intellectual society of the metropolis, its superior advantages for work in any department of thought, and the wider opportunities for fame and usefulness, continually draw off the great thinkers to the metropolis, and away from the country universities. Here, as elsewhere, the tendency of our age is toward the cities—centripetal, not centrifugal.

The presence of science side by side with literature, is a protest against the narrowness which overvalues one branch of learning and despises others. Co-operation is necessary to secure a happy co-existence of these studies. Each alone becomes conceited; and conceit is the most fatal enemy to progress.

EASY EXPERIMENTS IN ELEMENTARY CHEMISTRY.

Section 3.—*The Process of Filtering—Crystallization—Sublimation.*

THE separation of minute solid particles from a liquid, is accomplished by *Filtration.* The filter may be of paper, cloth, asbestos, or loose fibres of tow or cotton. Paper is generally employed, and is used as shown in the diagram.

Fig. 1.

Fig. 2.

Fig. 3.

Filter-papers of proper material and already cut into circles, are to be obtained at the chemists.

To prepare a filter for use, fold one of these circles twice, on the lines indicated in the first figure.

It will then form a quadrant having four thicknesses, as shown in the second figure. Open it so as to leave one thickness on one side and three upon the other, and place it in a funnel: wet the filter with rain or distilled water before using, especially if the experiment is a chemical one of any importance.

Fig. 4.

In pouring the liquid to be filtered into the funnel, hold a glass rod against the edge of the pouring-vessel, so that the liquid, which will run down the rod, may be directed against the side of the filter. (See figure 4.)

The funnel may be supported by a thin piece of wood or of card-board, through which a hole has been cut a little larger than the tube of the funnel.

If the funnel is supported by the receiving-glass itself, care must be taken that the latter is not closed by the funnel so as to prevent the escape of the air which is displaced by the filtered liquid. A bit of stick or string between the edge of the receiving-glass and the funnel is sufficient.

Exp. 12. Mix with water some finely divided, insoluble solid (a pulverized colored crayon forms a good example), and filter as directed above.

When a heavy precipitate has been allowed to settle, the liquid above it may be drawn off with a syphon ; or if considerable care be used, it may be nearly all poured off without disturbing the precipitate. This process is called *decantation.*

Crystallization.

Most solutions when exposed to a gentle heat, or even to the atmosphere, gradually lose the solvent by evaporation, and the solid in consequence returns to its original state.

If the circumstances are favorable, the atoms of the solid will arrange themselves in certain regular forms called *crystals.*

This process (called crystallization), is daily resorted to by the chemist for various reasons ; among which are :

1st. It brings the substance to a form in which its degree of concentration is known, and from which a solution of definite strength may be prepared.

2d. The solid form is the most convenient one for storing or transporting.

3d. Chemical salts are obtained in their purest form by crystallizing them. For when different substances are in solution together, they crystallize separately upon evaporation. Hot saturated solutions will generally deposit crystals as they cool. The size of the crystals depends very much upon the time occupied in forming ; the slower the process, the larger and the more perfect are the crystals.

The cautions to be observed in this department of experimental chemistry may be learned from the following examples.

Exp. 13. Make a hot saturated solution of alum. This is accomplished by adding the alum gradually to boiling water until a drop of the solution, tried upon a slip of glass, crystallizes as it cools.

Set the solution aside, and suspend in it a twig or nut, or wire ornament, around which some cotton or worsted has been closely wound. In twelve hours' time the suspended objects will be closely covered with crystals of alum.

A small basket, made by winding covered bonnet-wire about an egg or a nut, is a good object for the experiment. Care must be taken that when suspended it is covered by the solution and does not touch the side of the vessel.

Exp. 14. To make large crystals requires much careful manipulation and patience ; but good results may be obtained by the following method, generally known as Le Blanc's :

The salt to be crystallized is to be dissolved in rain or distilled water,

and evaporated until it is ready to crystallize on cooling. Set the solution aside until it is quite cold. Crystals in a mass will be formed at the bottom. These are of no account in the present experiment except as they are needed for re-dissolving. Pour off the liquid into a flat-bottomed vessel,—a plate of a suitable size will answer. Crystals will soon begin to form at some distance from each other. Select the most regular of these and transfer them to another flat-bottomed dish, and place them well apart. Pour over them a fresh saturated solution, prepared as at first. Turn each crystal over with a glass rod at least once a day, so as to expose each of the faces in turn to the action of the liquid; for the face upon which the crystal rests does not receive any addition. When the crystals have attained considerable size, those which are selected for further growth should be removed to other plates—each crystal in a separate vessel,—covered with the liquid as before, and each turned with the glass rod several times a day.

By continuing this treatment, they may be obtained of almost any desired size. If at any time during the process the angles or edges of the crystal become blunted, the liquid should be immediately poured off, and a fresh saturated solution substituted.

Exp. 15. Mix together solutions of sulphate of iron, sulphate of copper, sulphate of soda, sulphate of magnesia, and alum. Evaporate slowly by a gentle heat, or set the mixture aside to crystallize spontaneously. When the liquid has disappeared, observe that each salt has appeared by itself, and that they exhibit several different forms—the salts of iron and copper having a common form, the magnesia another, and the alum still another.

Exp. 16. To prepare small crystals to be observed with a magnifying glass or microscope.

Place a single drop of water upon a slip of glass which has been carefully cleaned. In the drop put a small crystal of sulphate of copper, and with gentle pressure rub it about so as to spread the liquid over an area of a quarter or half an inch. A single minute is sufficient time for the preparation of this solution. Remove the crystal, and place the glass slip under the microscope. The crystals will form first on the edges.

[A compound microscope is necessary for the full enjoyment of this experiment, and the process may be repeated to advantage with a great number of salts. Nitrate of potash, bichromate of potash, oxalate of ammonia, and sulphate of nickel, giving particularly fine results.]

For a lecture-room experiment with a magic lantern, the above experiment, slightly modified, may be shown to advantage. On a plain magic lantern slide, put, by means of a brush or sponge, a warm solution, nearly saturated, of chloride of ammonium, and exhibit as a picture by means of the lantern. If the solution is of the right density, the crys-

tals will spread gradually from one side of the plate to the other. Oxalate and nitrate of ammonia are also good salts for this experiment.

Exp. 17. The instantaneous change from liquid to solid form is exhibited as follows.

Prepare a solution of sulphate of soda, carefully saturated at the boiling point. It is best done in a flask, which should be nearly full when the solution is complete. Remove it while boiling, and immediately cork the flask air-tight.

When quite cold remove the cork, and the contents of the flask, except a few drops of "mother-liquor," will at once become solid. If the liquid should fail to solidify, drop in a small bit of the sulphate; when the crystals will be seen to group about it as a nucleus, and extend rapidly in all directions.

This experiment may be performed in an open-mouth vessel by employing a layer of oil, poured on the top, instead of corking as before. When cold, drop in a crystal of the sulphate, and the solution will immediately solidify.

Inexperienced performers should use care in boiling solutions in glass or porcelain vessels. When the flask or retort containing the liquid is placed securely on the stand ready for heating, apply the flame cautiously at first. Holding the lamp in the hand, direct the flame by a rapid circular motion around the bottom of the vessel, so as to raise all parts at the same time to a pretty high heat. After a minute or so, place the spirit-lamp directly under the flask, and so near to it that the flame shall spread over and around the whole lower portion. The experimenter should bear in mind the fact, that the hottest portion of the flame of a lamp is at the uppermost point; and when a flask is so placed that the tip of the lamp-flame just reaches it, a breakage is likely to follow. A safer but slower way to heat glass vessels, is to set the flask in a small sheet-iron dish containing sand, to which the heat is applied without the above precaution.

Exp. 18. Prepare a strong solution of sugar, not quite saturated, and set it away in a shallow dish, so that crystallization may be slow. Stretch some threads across from side to side of the vessel, just dipping below the surface of the syrup.

The crystals, which will be deposited on the thread, will be a quarter of an inch or more in diameter, and will be identical in composition with the "Rock-candy" of the shops.

Exp. 19. Precipitate some iodide of mercury, as in Exp. 9. Let it settle to the bottom of the glass; pour off the liquid and use the wet

precipitate as you would paint, applying it thickly to heavy white paper, or card-board. A spot an inch in diameter is large enough. Dry it by the spirit-lamp. Now heat the paper strongly but cautiously on the back side, against the painted spot. The red spot will turn light yellow. Draw the point of a pin, a pencil, or a knife across it, bearing on pretty firmly, and observe that a red mark is the result. If several such marks are made, and the paper laid aside for a day or two, the red color will be found extended over the whole space.

The change of color is attended with a change in the form of the minute crystals.

Sublimation.

Some solids, when subjected to the action of heat, assume the condition of vapor without passing through the intermediate liquid condition. Such vapors are promptly condensed by contact with any surface slightly cooler than the temperature at which they were released. The process is called *sublimation*, and is often employed in case of those bodies capable of being sublimed, as a means of separating them from impurities.

Exp. 20. Put a few small particles of iodine in a dry flask, and warm the whole globe of the flask by moving it about over the flame of the spirit-lamp so as to expose in turn all sides of it; then bring the flame to bear upon that point where the grains of iodine are, and they will immediately be converted into a heavy violet vapor. A fine crystalline deposit will at once collect on the neck of the flask. These crystals may be made of a visible size by slightly wetting the inside of the neck before subliming. A little alcohol will wash the deposit off, and form a tincture of iodine.

Exp. 21. Place a small piece of camphor-gum at the bottom of a test-tube, and apply a gentle heat. It sublimes readily, and may be caught upon a cooler surface presented in the upper part of the tube.

Exp. 22. Iodide of mercury, formed as in Exp. 9, filtered and dried, may be sublimed in a test-tube; the color changing from vermilion to yellow at the instant of changing to vapor.

Exp. 23. Place a little iodide of mercury in a watch-glass, and cover it with another similar glass, inverted. Apply heat to the lower glass until the iodide sublimes and appears as a yellow crystalline deposit on the upper glass. Remove the upper glass, and rub or bruise the yellow crystals until they become red again, when the experiment may be repeated.

Several other substances may be sublimed, at a little higher heat than the foregoing substances require. Among the number are indigo, sulphur, calomel, and benzoic acid.

MARCH, 1869.

OUR EDUCATIONAL PERIODICALS.

HAVE we an Educational paper or Magazine that is worthy of the cause it professes to represent?

Put the question to your nearest neighbor, or the next man you meet on the street. The chances are it will take him by surprise. Very probably he can tell you all about the representative papers of the principal political parties, of the various religious sects, of the "whiskey ring," or any other prominent "interest"—except education. Of that, "why! really, it's out of his line. Ask Professor Jones."

[*Next to personal liberty, popular education is the interest nearest the heart of the American people!—Vide* any popular oration, Governor's message, or other State paper.]

If Professor Jones is the enterprising head of the village high-school—Jones University, it is commonly called—he will probably smile at so absurd a question, and assure you that we can boast of quite a number of very excellent and able educational periodicals, though closer questioning may discover that his actual knowledge of them is none of the fullest.

The gentleman who spoke so eloquently about the march of intellect, at the University Hall the other evening, will tell you the same. So indeed will almost any one, who imagines that, in this land of free-schools and popular education, every educational ought-to-be *is*. So will *not* any one say who knows. Painful and humiliating as the truth is, it is the truth, that our educational periodicals are, one and all, trivial and mean compared with what they ought to be, to correspond with the interest which the American people pretend to feel in Education. Whether or not they correspond with the actual interest felt, we leave for others to say.

We question whether any one has studied this portion of our current literature more carefully than ourselves; whether any one has more

thoughtfully considered the public needs which the right sort of an educational journal would supply; whether any one has more earnestly striven to make an educational periodical that should be worthy of its name and purpose; and consequently, whether any one more keenly appreciates the difficulties which prevent, or have thus far prevented, the publication of such a periodical. This in no spirit of boasting;—but as an assurance that our sweeping condemnation of American educational periodicals (our own not excepted) is not to be taken as the assertion of a captious disposition, or the flippant judgment of one who condemns without knowledge.

We would not be understood as saying that our educational periodicals are intrinsically worthless. Far from it. The worst is worthy of more encouragement than the best has received. Compared with each other and with other periodicals of the price, some are indifferent, some good, some excellent. But compared with our idea of what an educational periodical ought to be, adequately to represent the important interests involved, they are all weak and commonplace and dull. Not one is what it should be, what all should be.

The poverty of our educational literature is indeed a matter of national reproach, especially to a nation that professes to be doing so much and so well for Education. How shall we account for it? By charging the people at large with indifference to matters educational? These are professional publications, the people might reply. They appeal not to the general public, but to a class—to teachers, not to parents. Even so; and a sorry comment it is on our boasted interest in public education, to be compelled to say that the parents of the land are less interested in whatever tends to promote the right education of the children, than are their hired servants, the teachers. The remark may be out of place, yet we cannot forbear to make it, that the increasing disposition of American parents to shift the education of their children upon the State is in danger of proving a greater evil, than the public schools can prove a blessing.

Since our educational literature is produced mainly by teachers, and is designed, ostensibly at least, to meet the wants and suit the taste of teachers, let us grant that teachers are mainly responsible for the inferior quality of the article. But which class of teachers? There is, first, the better class of teachers—those who read and think and have a good degree of literary taste and culture. These, it would be natural to

suppose, would give tone to the literature of the profession. But they do not. Some few of them contribute to the different educational periodicals; but their articles seem to be aimed at the great body of teachers several grades lower down in the literary and professional scale, oftener than at their equals. As a class, the teachers of this grade are not represented by our educational literature. They are too few in number perhaps to sustain a periodical designed expressly for them; and the greater part of them, thinking that they have no need of professional reading, certainly not of the kind commonly laid before them, hold themselves aloof from educational papers; thus, as we said before, they exert no considerable influence on the character of the professional literature.

At the other extreme of the professional scale is another and much larger class of teachers, composed mainly of boys and girls just from school, or perhaps never having enjoyed the advantages of schooling to any extent worth mentioning. This is a promising class; but, for the time being, it is immersed in the mysteries of parsing, and perplexed by the intricacies of cube-root. Its members have yet to acquire the elements of the knowledge they are to convey to their pupils. Not yet free from the thraldom of text-books, they are neither producers nor consumers of educational literature, and consequently are not to be held responsible for the character of the article supplied.

Between these two extremes lies the great body of teachers. These may be roughly divided into three sub-classes, as follows: (1) Leading Educators; (2) Educators who are led; and (3) Educators who neither lead nor go. Practically, the second class includes also the first (the latter being led by the book-agents, the former by the latter), while educationally the third includes the majority of the entire body. The last-named sub-class, *les rois fainéants* of the schools, are numerous beyond computation; but being merely dead-weights on the profession, they are as little to be counted on for the support of professional publications, or held responsible for their character, as are the books and benches of their respective school-rooms.

The second sub-class, perhaps, more than any other, is directly influential in keeping the educational periodicals of the country low in grade and trivial in character. Constituting the chief market for this part of our current literature, its wants largely determine the character and quality of the article supplied. As a rule, teachers of this class are not literary.

The leading educator's essay, at a county institute, is their ideal of literary effort. If they commend a published article, it is sure to be one put in under protest, with serious misgivings whether it ought to go in at all. As a general thing they want something "practical," or something funny. The funny, according to their taste, is something of the comic-almanac style; and the practical, something that somebody practices. Their teaching being a hodge-podge of "methods," the thing that suits them best is a detailed account of this man's method in spelling, Prof. So-and-So's method in Arithmetic, or Doctor Somebody-else's method in Grammar. Principles they have no stomach for; and the moment a writer transcends the commonplace, they regard him with suspicion. They subscribe for educational periodicals, not because they are particularly fond of reading, but because they have great regard for the Leading Educator; and the latter assures them that it is the duty of every teacher to take a professional magazine—particularly the one for which the Leading Educator is just then acting as agent. Let us not be severe upon this class. It does not furnish the highest possible market perhaps, yet it furnishes the widest *paying* market yet discovered for educational periodicals.

There remains the first-named sub-class—a class which threatens to absorb all the others. Are its members to blame because our average educational literature is commonplace and dull? Perish the thought! The educational world would cease to revolve should the Leading Educator become extinct, and educational papers would die outright. These chiefest patrons and promoters of learning never cease to encourage professional journals. They take all that are sent to them. They are "always glad to say a good word for your excellent periodical." It would appear to be absolutely necessary to their existence; and they to its. But just hint to one of them that it would be the proper thing for him to become a subscriber—a *paying* subscriber—and you have made a life-long enemy at once. What! pay for your paper? The idea is preposterous. You ought to pay him—for encouraging it.

It is proper to state just here, that the title "Leading Educator" does not imply, as the uninitiated might suppose, that the possessor has rendered distinguished service, or indeed any service, in teaching. It is a purely honorary title, conferred chiefly by publishers upon those who write commendatory letters concerning their books. Sometimes, however, the title is fairly won by valiant service in local school-book wars.

It is customary among "Leading Educators" to confer upon each other the nearly equivalent title "Eminent Instructor"—a title which ordinary teachers regard with great reverence. As a general thing, Leading Educators enjoy also, and commonly by mutual brevet, the additional title, *Professor*. But this is a digression; or would be, were not an understanding of this class of "educators" essential to a right comprehension of the causes which keep down the character of our educational literature, and pretty much everything else connected with the public schools.

We have not mentioned the professors, properly so called, because, even more than the first-named class of teachers, these count themselves out of the list of those for whom educational periodicals are designed. It is true, there is little in our average educational literature that is worthy of their time and attention: nevertheless, it is much their own fault that it is so. The subject of education is certainly not unworthy of their thought; and the fact that others treat it unworthily, does not excuse them for neglecting to treat it at all. It is, indeed, little to the credit of this portion of the teaching profession that it influences so slightly the character of the professional literature. Not only themselves, but the whole body of inferior teachers, would be greatly benefited by a periodical such as our first-class college professors, together with teachers of corresponding rank in the lower grades of schools, might sustain: and nothing would help more to remove the stigma which now rests upon American educational literature.

The great trouble with our educational periodicals seems to be mainly this: they have been conducted chiefly for and by the noisy portion of the profession—teachers and school-conductors who imagine themselves as riding and guiding the foremost wave of educational progress, when in fact they are but as straws cast up into momentary prominence, by forces over which they have but the slightest influence. Fancying that they are leading educators in reality, they push themselves forward on all occasions, as representatives of the educational thought and action of the country, only to show how sadly they are lacking in professional ability and literary culture. The natural result has been so to disgust the better part of the profession as to turn their contributions into other channels, and thus to create a general impression among intelligent people that educational literature is, practically, if not necessarily, synonymous with *trash*.

THE CLASH OF SYSTEMS.

PROFESSOR PORTER, of Yale, contributes to the *New Englander* for January an elaborate defence of the classical college-course, and what he imagines to be a crushing reply to the advocates of a less restricted curriculum. He styles the article, "The American Colleges and the American Public," meaning by the latter term "the tribunal before which the colleges are summoned to appear" to "give a satisfactory explanation and defence of their system of discipline and study."

"This tribunal," he says, "consists, first of all, of a limited class of lecturers and writers known as *educational reformers*, whose stock in trade consists of a scanty outfit of a few facts imperfectly conceived and incorrectly recited, in respect to the modes of education pursued in the middle ages. . . . .

"Another portion of the public, who are so ready to prejudge the colleges and their system disadvantageously, is drawn from the very numerous and most respectable class of self-made men who have risen to eminence without a collegiate education. . . . .

"Another important element in this varying and shifting tribunal, before which the colleges are summoned to answer, consists of the many graduates of these colleges, who have received little advantage from their college training, or are unconscious of the advantages which they have received in fact. . . . .

The rest of the "tribunal" consists of others, "and these not a few, who were bent on self-improvement in their college-life, and were not unwilling to labor, whose want of success was chiefly owing to their very inadequate preparation for its studies;" and "some graduates," "who were earnest, laborious, and successful in their college studies, who are disposed earnestly to criticise the course which was prescribed, because it did not fit them more directly for the calling or duties of their actual life."

These are "The American Public!" These constitute the tribunal which presumes to be "both assailant and judge" of "The American Colleges!" And it is very easy for Professor Porter to put to shame so ignorant and presumptuous a tribunal. But is not Professor Porter aware that the tribunal he describes is not the true one? or at best is the true one less its strongest members—the very ones who make it formidable? For instance, the actual "American Public" includes a goodly number of college professors who have enjoyed a classical training as thorough as Professor Porter's; who have had an experience in teaching the classics not inferior to his. Are none of these to be included among the advocates of modern studies? There are also quite a number who have sup-

plemented this professorial experience by that of the College President. Do all these side with Professor Porter?

The fact is, Professor Porter has a happy faculty of ignoring the real strength of his opponents, as well as the strong points of his opponents' arguments. With an air of great dignity and candor, he dodges the main question, and indulges in partisan tricks to an extent absolutely painful to one who wishes to see the different educational theories fairly tested, and approved or condemned on their merit, not according to their agreement or disagreement with anybody's system of philosophy.

Another example will suffice to illustrate Professor Porter's method of discussion. President White, of Cornell University, says, somewhere:

"When I was a student in one of the largest New England Colleges, there were over a hundred in my class. Of these, twenty or thirty loved classical studies, and could have made them a noble means of culture; but these were held back by, perhaps, seventy, who dreamed, or lounged, or 'ponied,' or 'smouged' through—sadly to the detriment of their minds and morals. Consequently the classical professors—as good as ever blessed any college—were obliged to give their main labor to stirring up the dullards, to whipping in the laggards—in short, not to the thirty who loved their particular studies, but to the seventy who loathed them."

This Professor Porter quotes, and then goes on to say, in that supercilious style so often used by those who would appear to add momentum to their words by pitching them down from some assumed high moral or intellectual vantage-ground:

"The Cornell University will not have things so ordered; it will 'indulge in no tirades against the classics.' 'It will have the best classical professors it can secure—it will equip their departments thoroughly, it will not thwart them by forcing into their lecture-rooms a mass of students who, while reciting Greek, are thinking of German,' etc., etc. That is, President White would have us to infer that in his opinion, and, we believe there are many who agree with him, that 'the dullards' and 'the laggards,' the men who 'ponied' and 'smouged' in the classics, would have neither been nor done either if they had been allowed to study German instead of Greek, and that the majority of every college-class would study languages with alacrity and zeal, if only they were allowed to study German or French."

That a man of Professor Porter's ability could deliberately make such an inference from the words quoted, or from any words of President White's that we have seen, would be incredible if we did not know how apt the partisan spirit is to pervert judgment. We would not insult the reader by saying, what must be plain to the meanest intelligence, that President White would evidently have us infer nothing of the kind.

Given a hundred or five hundred students such as constitute our average college classes; given also a single course of study which all must pursue, it makes no great difference whether the course be classical, or scientific, or what: a certain portion of the students will like the course, and will make good studies in it; a certain other portion—and, judging from things as they are, it will not be a small one—will fail to be interested by those particular studies; they will "pony" and "smouge," and, while receiving little good themselves, will prevent the few earnest students from making that progress which they would make alone. Must we, therefore, infer that none of the "laggards" and "dullards" of our college classes would make good studies in anything? So Professor Porter appears to think. Yet no one, certainly not President White, would claim that any course of study or any variety of courses, will insure good work from all who go to college. Blockheads are inevitable. But, while all are not likely to choose Greek, or Mathematics, or Chemistry, it is very probable, if not morally certain, that with several courses to choose from, each offering the same scholastic rewards for successful effort, the majority of students will select each for himself *some* course in which he will make as good studies as the few now do in the classics. A student is not necessarily an incurable dunce because he happens to dislike Greek.

One may admit, what is far from being proved, that the study of the ancient classics affords a better and broader culture than the pursuit of science or the study of the modern languages and literatures. The stubborn fact remains, that only a small percentage of modern students will receive this broad and excellent culture, or any considerable portion of it. What then?

"An acre in Middlesex," says Macaulay, "is worth a principality in Utopia." Some few, we know, will strive for the principality; but the many are so terribly utilitarian that they will work for the acre or nothing. Is it not good policy, then, to offer our students a choice in the matter? Grant that many students will select what Professor Porter believes to be the inferior course of study; yet it is not impossible that they will receive as desirable a mental culture in the pursuit of their favorite studies, as they would as "laggards" in studies that they loathe. And there is no reason to suppose that, with a variety of scholastic courses, a much greater number of students might not be induced to make good studies than when but one is offered, Prof. Porter to the contrary notwithstanding.

EDUCATIONAL INTELLIGENCE.

MAINE.—"We are nigh death's door educationally—that is, in the country schools. Our vigorous towns and villages show signs of life and development: but outside of these, apathy, apathy, apathy."

Such is the private testimony of the earnest and energetic Superintendent of the Common Schools of Maine. His official testimony is the same: "Excepting in the larger and more vigorous towns, as a State, we are behind the record of fifteen years ago in school matters. Our school-houses are no better—only half of them pronounced in good condition; our teachers plodding as ever, with no extra facilities for improvement, excepting the Normal Schools, which by no means counterbalance the loss of the County Teachers' Institute, their pay not advanced with the increased cost of living; school inspection in no degree more thorough than formerly, parents exhibiting no increased amount of interest, while the actual percentage of average attendance in the public schools is less than formerly." (Report 1868, page 5.)

That this is no exaggeration may be seen from the following table, copied from a "Comparative Statement" on page 65 of the Report.

	1868.	1858.	1867.	1857.
Whole number of scholars between 4 and 21	225,200	241,883	228,388	240,764
Number registered in Summer Schools	111,552	132,182	110,936	131,404
Average attendance	85,407	100,726	85,965	100,251
Number registered in Winter Schools	124,655	154,890	129,848	151,636
Average attendance	97,790	122,430	99,690	117,415
Number in Winter Schools not attending Summer Schools	19,714		20,786	
Average length of schools for the year	18w. 3d.	19w. 5d.	18w. 1d.	19w. 5d.
Number of School-Houses	3,719	3,932	3,782	
Number of School-Houses in good condition	1,977	1,925	2,065	1,881
Number of School-Houses built last year	93	134	79	149
Cost of same	$272,774	$66,739	$323,581	$114,000
Average wages of Male Teachers per month, excluding board	29 50	21 86	28 78	22 21
Average wages of Female Teachers per week, excluding board	2 94	2 13	2 71	2 10
Average cost of Teachers' board per week	2 17		2 12	
Amount of school money voted	598,094 00	402,761 00	518,292 00	401,603 00
Excess above amount required by law		54,712 00	91,835 00	54,066 00
Less than amount required by law	30,506 00			
Amount raised per scholar	2 65	1 59	2 26	1 57
Amount paid for tuition in private schools, academies or colleges in the State	54,545 00	26,581 56	40,614 33	29,455 69
Percentage of average attendance to whole number	.42	.47	.44	.48
Percentage of average attendance to scholars registered	.77	.77	.77	.76
Aggregate amount expended for schools	$1,072,498	623,690 69	936,131 75	663,797 58
Amount of School Fund	261,112	149,085 48	244,121 53	136,346 54

On another page is given the census of "scholars" (meaning, evidently, the whole number of children and youth), between four and twenty-one years of age, for the successive years from 1858 to 1868. From 1858 to 1860, there was an increase amounting to 3,037. From 1860 to 1868, there was a constant, though variable, decrease amounting to nearly 20,000,—the largest diminution, 5,391, occurring in 1865; and the smallest, 419, in 1866. That there should have been a decrease during these years is not surprising; but it is surprising that the Superintendent

should overlook the very apparent cause of it. "Have we ceased to be a producing people?" he asks. "Are the vital forces expended in brain-labor, and lost to physical production?"—(a capital joke, that last, in view of the educational activity of Maine!) "Are the modern fashionable criminalities of infanticide and feticide creeping into *our* State community?" The Superintendent considerately turns over the matter to the statistician and sociologist; where, perhaps, we ought to leave it. But remembering the regiments of stalwart sons of Maine who went down to the war never to return, we cannot refrain from suggesting that their absence may possibly account, partially at least, for the decrease in the school population; and that the decrease is a matter for mournful pride to the people of Maine, rather than for self-condemnation, or charges of "fashionable criminalities."

The falling off of last year, 3,188, which seems to puzzle the Superintendent by its excess over that of the two preceding years, is not so surprising after all, when we remember the wonderful facility with which the later years of adolescence are skipt by patriotic young men during an exciting political canvass. The young men of Maine must be very slow and very honest, if some of the votes cast at the last election—the heaviest vote ever polled in the State—were not cast at the expense of the school enumeration. But giving speculative matters the go-by, there remains enough of indisputable fact to show that the common schools of Maine are declining, and have been declining for several years. The falling off in the "whole number of scholars" may be honorably explained, as an element of the sacrifice which Maine, in common with other northern States, made for the Union: the excessive falling off in the school enrolment and average attendance cannot be so explained. It points directly to the decreasing efficiency of the public schools; and more especially as private schools increase in number and efficiency during the same period of time. The extent of this excess may be shown as follows:

In the whole number of scholars, the decrease from 1858–68 was, 16,683.
In the number enrolled in summer schools, the decrease was, 20,630.
In the number enrolled in winter schools, the decrease was, 30,205.
In the average attendance, summer schools, the decrease was, 15,319.
In the average attendance, winter schools, the decrease was, 25,360.

The falling off in the school population is justly a matter to be regretted; but it cannot well be helped. The disproportionate decline in the efficiency of the schools can be helped. It is a matter, not merely to be regretted but to be ashamed of, and stopped.

There are several other points deserving of notice, which our space will not allow us to speak of at this time. Some of these may be learned from the table, for example, the condition of the school-houses, the decrease in the length of school terms, the meagre pay of teachers, the irregularity of attendance, etc. These, with the remedies proposed by the Superintendent, may be taken up hereafter.

VICTORIA.—The report of the Board of Education, 1867–68, enters very fully into the subject of attendance in National, Denominational, and Common Schools, giving separately, in certain cases, the figures for town schools, country schools, and "gold-fields" schools. The percentage of the population, between five and fifteen years of age, in actual attendance at school was 55.68, or five out of nine. The common schools are open,

on an average, 230 days in the year; and the average attendance of pupils enrolled last year was 132 days—a very favorable attendance compared with other English-speaking countries. In England, the average number of days attendance does not exceed 129; in Canada it does not reach 100. The average daily attendance in Victoria was a little short of half the number enrolled. The supervision of the schools seems to be thorough, involving a pretty close general survey of the premises, apparatus, discipline, method, and so forth, as well as examination in regard to studies. The teachers are examined as in England, and certificates of competency are awarded. More women than men are employed as teachers. The local contributions toward the payment of teachers' salaries reach nearly one-third the whole amount, the rest being contributed by the government. Several cases have occurred in the colony in which teachers have been found "guilty of falsifying the rolls," rendering themselves liable for "wilful and corrupt perjury." In each case proved, the guilty teacher was suspended for five years. In this the Victorians are quite the antipodes of New Yorkers. *We* offer a premium for falsifying rolls, by grading the Principal's salary according to the number of pupils reported in average attendance.

CURRENT PUBLICATIONS.

IT is a pleasant task to notice a pleasant book. Such a book is Prof. Day's recent work on English Literature.[1] It differs from other works on the same subject by introducing the student to English literature *as a growth*. Specimens therefrom are taken from certain marked stages, as represented in the writings of the best authors. Nor are these mere fragments; they are generally, and so far as was practicable, complete artistic productions. These are presented in the orthographical form of the originals,—a very important fact in studying the philology and the growth of a literature,—and accompanied by notes explanatory, etymological, grammatical, etc. Part Second treats of the formation and growth of Language, and of the various departments of language and literature. The plan is original, and the work seems well calculated to serve a valuable purpose.

There is no lack of treatises on the theory of composition. But mere theory is not enough. Young persons, in order to acquire the art of composition, need to be taught practically both how to obtain ideas and how to express them. One of the best elementary treatises that we have seen, having this end in view, is now lying before us.[2] It contains 140 exercises, in which subjects are exhibited in outline, with here and there an outline filled out; not only showing how subjects may be treated and thought awakened, but giving work to be performed by the pupil himself. If we were to object to any part of the volume as a text-book for

[1] An Introduction to the Study of English Literature. By HENRY N. DAY. New York: C. Scribner & Co., 1869.

[2] Outlines of Composition. By H. J. ZANDER and T. E. HOWARD, A. M. Boston: Robt. S. Davis & Co., 1869. 12mo, pp. 203.

beginners, it would be to the language employed, much of it being above the range and comprehension of ordinary children. Thus, in the very first exercise, we find such words as "rectangular," "utility," "renovated," "ventilated," "vitiated," etc. In models for children, such words are out of place, and seem ridiculous enough. Still, the *plan* of the work is good; the idea on which it is formed is correct; and, excepting upon the point which we have referred to, we should think the book well adapted to aid beginners and advance them rapidly in the acquirement of the art of composition. To say the least of it, it is an effort in the right direction, for which the authors deserve the thanks of teachers and scholars who may make trial of their book.

Trench's Lectures on the English Language[1] come to us, in a sixth edition, revised and improved. Since the appearance of the first edition, a number of other and valuable works pertaining to the subject have been given to the public. Of these, the author has availed himself, and thereby materially enhanced the value of his treatise. The American publishers have issued the volume in a very neat and attractive form.

The reformation of youthful criminals is one of those important subjects that, within the last half-century, have claimed the attention of some of the purest and noblest minds of Europe and America; and the history of this movement, though comparatively brief, forms one of the most cheering and instructive chapters in the annals of modern times. Dr. Peirce's work on this subject[2] is a volume replete with information as well as of absorbing interest. After glancing at the labors of Mrs. Fry, John Falk, Count Adelbert, and others in Europe, the author enters upon the history of the rise and progress of the movement in this country, leading to the establishment of the New York House of Refuge, and afterward to other and kindred reformatories both in the United States and in Europe. The short sketches of the early movers in this enterprise, and of their labors, are full of interest. The brief narratives of the reformed, with which the volume abounds, are also interesting; many of them exceedingly touching. The various reformatory systems of America and Europe are compared with judgment and impartiality. The book deserves to be widely circulated and thoughtfully read. It can scarcely fail to awake a deeper interest in, and more extended effort on behalf of, a large but unfortunate class of our population. One salutary effect it will doubtless produce in certain quarters, is the removal of the impression that the Refuge is a penal institution instead of one whose designs are benevolent and whose discipline is reformatory solely. The volume closes with a presentation of the view of the more advanced thinkers in this country and in England respecting the period for which convicts in general should be confined; namely, till reformation or death. The argument sustaining this view is a strong one; and the 19th century will not probably pass away before this view will give direction to the penal legislation and action of all enlightened lands.

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[1] English, Past and Present. By R. C. Trench. New York: C. Scribner & Co.

[2] A Half Century with Juvenile Delinquents. By B. K. Peirce, D. D., Chaplain of New York House of Refuge. New York: D. Appleton & Co., 1869. Crown 8vo, pp. 384.